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Sustainability Practices Intention in Food Manufacturing SMEs: A Dual-Mediation Model of Innovation Capability and Green Technology Capability

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ABSTRACT: Sustainability has become a strategic imperative for food manufacturing small and medium-sized enterprises (SMEs). Particularly, in highly regulated environments such as Malaysia, where compliance with food safety, Halal certification, and environmental standards is increasingly stringent. Despite growing scholarly attention, existing research remains fragmented and provides limited theoretical explanation of how internal organizational resources are translated into Sustainability Practices Intention (SPI), especially in resource-constrained SME contexts. Addressing this gap, this paper develops a theory-integrated conceptual framework explaining the transformation of organizational resources into sustainability-oriented intentions. Grounded in the Natural Resource-Based View, Dynamic Capability Theory, and the Triple Bottom Line framework, the study proposes a dual-mediation model in which innovation capability and green technology capability function as parallel but distinct mechanisms linking organizational support and human resource quality to SPI. The framework advances current literature by distinguishing between general adaptive capability and sustainability-specific technological capability, thereby offering a more precise explanation of how SMEs operationalize sustainability beyond compliance-driven approaches. By integrating multiple theoretical perspectives into a unified model, the study extends understanding of sustainability practices intention and highlights capability development as a central driver of sustainability adoption in SMEs. Practically, the model provides guidance for managers and policymakers in designing targeted interventions that strengthen both innovation and green technology capabilities to enhance sustainability implementation in the food manufacturing sector.

KEYWORDS: Sustainability Practices Intention, Innovation Capability, Green Technology Capability, Organizational Support, Human Resource Quality, Food Manufacturing SMEs.

1. INTRODUCTION

Sustainability has become a strategic imperative in contemporary manufacturing, extending organizational priorities from financial performance to include environmental and social responsibilities. This shift is strongly reflected in the Triple Bottom Line (TBL), which emphasizes the simultaneous pursuit of economic viability, environmental stewardship, and social well-being (Elkington, 1997; Ghimire et al., 2026). In emerging economies, sustainability pressures are increasingly driven by regulatory expectations, stakeholder demands, and global supply-chain requirements, compelling firms to integrate sustainability into core operational strategies (Singh et al., 2025)

Within this context, the food manufacturing sector is a particularly important setting for sustainability research due to its resource-intensive operations, high energy consumption, significant waste generation, and strong reliance on process-level technologies (Ghaleb et al., 2024; Mabkhot et al., 2025). In Malaysia, food manufacturing SMEs operate within a complex environment characterized by food safety regulations, Halal compliance requirements, environmental standards, and growing consumer expectations for sustainable production. Despite increasing awareness of sustainability, adoption among SMEs remains inconsistent and often reactive rather than strategically embedded (Chong, 2018; Hilmi et al., 2020). Financial limitations, technological constraints, and insufficient human capital continue to restrict firms' ability to translate sustainability awareness into meaningful implementation (Rahman & Raman, 2019).

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Existing sustainability research increasingly recognizes the importance of internal organizational resources in supporting sustainability transformation. Organizational support, reflected in leadership commitment and strategic resource allocation, creates an enabling environment for sustainability initiatives, while human resource quality determines the firm's ability to absorb knowledge and execute environmental practices (Delmas & Pekovic, 2018; Yong et al., 2020). However, resource possession alone does not necessarily result in sustainability-oriented outcomes. While the Resource-Based View (RBV) explains how valuable internal resources contribute to competitive advantage (Barney, 1991), and the Natural Resource-Based View (NRBV) extends this logic toward environmentally oriented capabilities (Hart, 1995), these perspectives provide a limited explanation of how organizational resources are transformed into actionable sustainability capabilities.

This limitation highlights the relevance of Dynamic Capability Theory (DCT), which emphasizes the firm's ability to integrate, build, and reconfigure resources in response to changing environmental conditions (Teece et al., 1997). Within sustainability contexts, such transformation processes are critical because firms must continuously adapt to technological, regulatory, and market pressures. Prior studies have predominantly emphasized innovation capability as the principal mechanism linking organizational resources to sustainability-related outcomes (Calantone et al., 2002; Latip et al., 2025). However, the generalized nature of innovation capability often obscures the role of sustainability-specific technological competencies, particularly in manufacturing environments where environmental performance depends heavily on process technologies. Accordingly, the pathways through which organizational resources influence Sustainability Practices Intention (SPI) remain theoretically underdeveloped. Existing studies provide evidence that innovation capability only partially mediates sustainability-related relationships (Latip et al., 2025), suggesting the presence of additional capability mechanisms that have not been adequately conceptualized. This gap is particularly important in SME contexts, where sustainability implementation depends heavily on the firm's capability to operationalize environmental initiatives despite resource constraints.

Addressing this gap, the present study develops a theory-integrated conceptual framework explaining how organizational support and human resource quality are transformed into Sustainability Practices Intention through two distinct capability pathways: Innovation Capability (IC) and Green Technology Capability (GTC). While IC reflects a general adaptive capability that supports organizational learning and process improvement, GTC represents a sustainability-specific capability focused on the adoption and utilization of environmentally aligned technologies. By distinguishing between these capabilities, the study advances a dual-capability mediation perspective that extends existing sustainability and capability-based research beyond single-capability explanations. This study contributes by integrating the Natural Resource-Based View, Dynamic Capability Theory, and Triple Bottom Line into a coherent explanatory framework for sustainability practices intention in SMEs. The study further positions food manufacturing SMEs as a theoretically significant context in which resource constraints intensify the importance of differentiated capability development for sustainability transformation.

2. THEORETICAL FOUNDATION AND CONCEPTUAL FRAMEWORK

2.1 Natural Resource-Based View (NRBV)

The Natural Resource-Based View (NRBV) provides the primary theoretical foundation for explaining how environmentally embedded resources contribute to sustainability-oriented competitive advantage. Extending the Resource-Based View (RBV), NRBV argues that firms achieve sustained advantage not only through valuable, rare, inimitable, and non-substitutable resources, but also through their ability to deploy these resources toward environmental management and sustainability objectives (Hart, 1995; Barney, 1991). Within this perspective, organizational support and human resource quality constitute strategic internal resources that facilitate sustainability-oriented transformation (Arokiasamy et al., 2023).

Despite its explanatory relevance, NRBV remains limited in clarifying the internal mechanisms through which organizational resources are translated into sustainability-oriented outcomes. Although the theory highlights capabilities associated with pollution prevention, product stewardship, and sustainable development (Hart, 1995), it provides limited explanation regarding how different categories of organizational capabilities emerge and function within firms. In particular, NRBV does not explicitly distinguish between general innovation-oriented capabilities and sustainability-specific technological capabilities, thereby constraining its ability to explain how firms operationalize sustainability strategies in practice. This limitation necessitates a complementary theoretical perspective capable of explaining the dynamic conversion of resources into differentiated organizational capabilities.

2.2 Dynamic Capability Theory (DCT)

Dynamic Capability Theory (DCT) provides the central explanatory mechanism for addressing the limitations of static resource-based perspectives. Dynamic capabilities refer to a firm's ability to integrate, build, and reconfigure internal and external competencies in response to rapidly changing environments (Teece et al., 1997). Unlike RBV, which primarily emphasizes resource possession, DCT focuses on capability renewal, adaptation, and strategic reconfiguration (Teece, 2007). This distinction is particularly important in sustainability contexts, where firms must continuously respond to evolving environmental regulations, technological developments, and stakeholder expectations (Singh et al., 2025; Ghimire et al., 2026; Piaralal et al., 2026).

Teece (2007) conceptualizes dynamic capabilities through three interrelated microfoundations: sensing, seizing, and transforming. In sustainability contexts, sensing reflects the firm's ability to identify environmental risks and opportunities, seizing involves mobilizing resources toward sustainability initiatives, and transforming refers to the reconfiguration of organizational processes to support sustainability implementation. These adaptive processes are especially critical for SMEs, where limited resources increase dependence on efficient capability deployment and organizational flexibility (Teece, 2014; Helfat & Peteraf, 2015).

Within this framework, Innovation Capability (IC) and Green Technology Capability (GTC) are conceptualized as distinct yet complementary dynamic capabilities. IC represents a general adaptive capability that enables firms to improve processes, enhance operational efficiency, and develop new organizational solutions (Calantone et al., 2002). In contrast, GTC reflects a sustainability-specific capability

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associated with the acquisition, integration, and deployment of environmentally friendly technologies (Chen et al., 2020). While IC strengthens broad organizational adaptability, GTC directly supports environmental implementation and sustainability execution.

This distinction is theoretically significant because not all dynamic capabilities contribute equally to sustainability outcomes. In capital-intensive sectors such as food manufacturing, environmental performance depends not only on organizational adaptability but also on technological readiness. Empirical evidence indicates that innovation capability only partially mediates the relationship between organizational resources and Sustainability Practices Intention (SPI) (Latip et al., 2025), suggesting that general innovation capability alone is insufficient to fully explain sustainability-oriented outcomes. DCT therefore provides the theoretical basis for positioning IC and GTC as parallel capability pathways linking organizational resources to SPI.

2.3 Triple Bottom Line (TBL)

The Triple Bottom Line (TBL) provides the normative foundation for sustainability within this study. The framework conceptualizes organizational performance across three interdependent dimensions (economic, environmental, and social), thereby extending evaluation beyond traditional financial outcomes (Elkington, 1997). In manufacturing contexts, TBL emphasizes the need to balance operational efficiency with environmental responsibility and broader social considerations.

However, while TBL effectively captures the multidimensional nature of sustainability, it offers a limited explanation of the internal mechanisms by which sustainability outcomes are achieved. Existing critiques argue that the framework is largely outcome-oriented and insufficiently explains how firms develop the organizational capabilities necessary to achieve balanced sustainability performance (Hubbard, 2009; Milne & Gray, 2013). This limitation becomes particularly salient in SMEs, where financial, technological, and human resource constraints often hinder systematic sustainability implementation.

Within this study, TBL informs the conceptualization of Sustainability Practices Intention (SPI) as a strategic organizational orientation reflecting commitment toward integrating sustainability into core operations. Nevertheless, the formation of SPI depends not only on sustainability awareness or strategic commitment, but also on the firm's perceived capability to operationalize sustainability objectives effectively. This reinforces the importance of integrating TBL with capability-based perspectives that explain how sustainability-oriented intentions are developed and sustained.

2.4 Integration of Theories and Conceptual Framework Development

The integration of NRBV, DCT, and TBL provides a comprehensive explanation of Sustainability Practices Intention (SPI) in SMEs. Collectively, these theories establish a sequential logic in which organizational resources are transformed into organizational capabilities, which subsequently shape sustainability-oriented strategic intention. Specifically, RBV and NRBV explain the strategic importance of internal organizational resources (Barney, 1991; Hart, 1995), DCT explains how these resources are converted into adaptive capabilities (Teece et al., 1997; Teece, 2007), and TBL defines sustainability as a multidimensional organizational objective (Elkington, 1997).

This theoretical integration also reveals a critical limitation in prior sustainability research. Existing models have predominantly relied on a single capability pathway, particularly innovation capability, to explain sustainability-related outcomes. However, empirical evidence demonstrates that IC only partially mediates the relationship between organizational resources and SPI (Latip et al., 2025), indicating the presence of additional capability mechanisms that remain theoretically underexplored.

Addressing this limitation, the present study advances a dual-capability mediation framework that distinguishes between Innovation Capability (IC) and Green Technology Capability (GTC) as complementary yet functionally distinct capability pathways. While IC supports adaptability, process improvement, and organizational flexibility, GTC provides the technological specificity required for environmental implementation. IC and GTC operate as parallel and independent mediating mechanisms through which organizational resources influence SPI. The proposed framework, therefore, offers a more precise and context-sensitive explanation of how organizational resources are translated into SPI within resource-constrained SME environments.

Based on this theoretical integration, the proposed conceptual framework is presented in Figure 1.

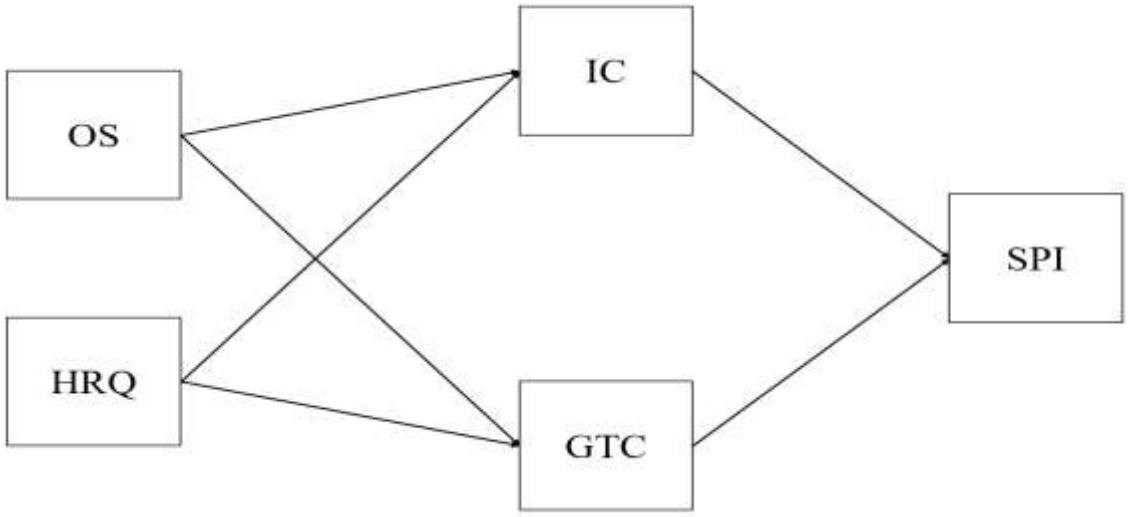


Fig. 1 Conceptual Framework. Note. OS=Organization Support, HRQ=Human Resource Quality, IC=Innovation Capability, GTC=Green Technology Capability, SPI=Sustainability Practice Intention.

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3. REVIEW OF CORE CONSTRUCTS

3.1 Sustainability Practices Intention (SPI)

Sustainability Practices Intention (SPI) refers to a firm's strategic willingness and commitment to adopt sustainability-oriented initiatives and is conceptualized as the primary dependent construct in this study. Grounded in the Theory of Planned Behavior, intention is widely recognized as the most immediate predictor of actual behavior (Ajzen, 1991). This construct is particularly relevant in SME contexts, where structural and operational constraints frequently limit the translation of sustainability commitment into actual implementation (Chong, 2018; Latip et al., 2025).

From a sustainability perspective, SPI is anchored in the Triple Bottom Line framework, which emphasizes the integration of environmental, economic, and social considerations into organizational decision-making (Elkington, 1997). In manufacturing settings, these considerations include resource efficiency, waste reduction, pollution control, energy optimization, and socially responsible operational practices. However, prior studies consistently report the existence of an intention–implementation gap among SMEs, whereby sustainability awareness does not necessarily translate into sustained organizational action due to financial, technological, and human resource limitations (Chong, 2018; Hilmi et al., 2020; Latip et al., 2025).

Within this study, SPI is not treated merely as a behavioral precursor, but as a capability-contingent strategic orientation. Firms are more likely to develop strong sustainability intentions when sustainability practices are perceived as operationally feasible and technologically executable. This interpretation aligns with capability-based perspectives, which emphasize that strategic intent is shaped not solely by resource availability, but by the firm's ability to mobilize and deploy organizational capabilities effectively (Teece et al., 1997). Accordingly, SPI is conceptualized as the outcome of capability formation processes rather than a direct consequence of organizational commitment alone.

3.2 Organizational Antecedents: Organizational Support (OS) & Human Resource Quality (HRQ)

Organizational Support (OS) and Human Resource Quality (HRQ) are conceptualized as foundational antecedent constructs that facilitate capability development within SMEs. Grounded in the Resource-Based View and Natural Resource-Based View, both constructs represent strategic internal resources that shape organizational adaptability and sustainability-oriented transformation (Barney, 1991; Hart, 1995; Latip et al., 2025).

Organizational Support refers to the extent to which top management demonstrates commitment toward sustainability through strategic prioritization, policy formulation, leadership engagement, and resource allocation. Such support establishes the institutional conditions necessary for sustainability-oriented capability development by signaling organizational commitment toward long-term environmental objectives (Chong, 2018; Latip et al., 2025). However, organizational support alone does not guarantee sustainability-oriented outcomes unless it is translated into operational capabilities.

Human Resource Quality reflects the firm's collective expertise, technical competencies, environmental awareness, and adaptive learning capacity. Within the Dynamic Capability Theory perspective, HRQ is particularly important because capability development depends heavily on organizational learning, knowledge integration, and the ability to respond to changing environmental demands (Teece et al., 1997). High-quality human resources enable firms to absorb external knowledge, operate advanced technologies, and adapt organizational processes to sustainability requirements (Yong et al., 2020; Latip et al., 2025).

Existing evidence nevertheless suggests that the influence of OS and HRQ on sustainability outcomes is predominantly indirect rather than direct. Organizational resources do not automatically generate Sustainability Practices Intention (SPI) unless they are transformed into actionable organizational capabilities. Empirical findings indicate that intermediary capability mechanisms play a critical role in translating organizational resources into sustainability-oriented strategic intent (Latip et al., 2025). This capability transformation process therefore represents the central explanatory mechanism underlying the present study.

3.3 Innovation Capability (IC)

Innovation Capability (IC) is conceptualized as a general dynamic capability that enables firms to generate, assimilate, and apply knowledge to improve products, processes, and organizational systems (Teece, 2007). Within the Dynamic Capability Theory framework, IC reflects the firm's capacity to adapt to changing environments through continuous learning, experimentation, and organizational renewal (Teece et al., 1997; Teece, 2007).

In sustainability contexts, IC facilitates both technological and non-technological improvements, including process optimization, operational efficiency enhancement, resource utilization improvement, and the development of new organizational solutions (Calantone et al., 2002; Cheng & Shiu, 2019). Such adaptive improvements may indirectly contribute to sustainability objectives by reducing inefficiencies and minimizing resource consumption (Longoni & Cagliano, 2018). Despite its strategic relevance, IC remains conceptually broad and not inherently sustainability-oriented. Firms may demonstrate strong innovation capability in areas unrelated to environmental sustainability, including marketing innovation, operational restructuring, or logistical redesign. This domain-general nature reduces the explanatory precision of IC when sustainability-specific outcomes are examined (Teece, 2007; Latip et al., 2025).

Empirical evidence further indicates that IC only partially mediates the relationship between organizational resources and Sustainability Practices Intention (SPI) (Latip et al., 2025). This suggests that while IC enhances adaptability and reduces uncertainty associated with sustainability adoption, it does not fully address the technological requirements necessary for environmental implementation. Accordingly, IC is positioned in this study as a necessary but insufficient capability for sustainability transformation.

3.4 Green Technology Capability (GTC)

Green Technology Capability (GTC) is conceptualized as a sustainability-specific dynamic capability associated with the acquisition, integration, and deployment of environmentally friendly technologies (Lim et al., 2022). Unlike Innovation Capability, which reflects general organizational adaptability, GTC is explicitly oriented toward environmental implementation and technological sustainability execution.

GTC encompasses technological competencies related to energy-efficient systems, pollution control technologies, waste reduction mechanisms, cleaner production processes, and renewable energy solutions. The capability also includes the technical expertise required to operate,

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maintain, and optimize environmentally aligned technologies within production environments (Chen et al., 2020; Latip et al., 2025). In manufacturing sectors such as food production, where environmental performance is closely tied to production systems and process technologies, GTC becomes a critical determinant of sustainability feasibility.

From a theoretical perspective, GTC aligns closely with the Natural Resource-Based View, which emphasizes environmental capabilities as strategic sources of competitive advantage (Hart, 1995). However, GTC extends beyond broad environmental orientation by providing a more operationalized mechanism through which firms convert sustainability objectives into executable organizational practices. Mechanistically, GTC reduces technological uncertainty, enhances implementation feasibility, and strengthens firms' ability to comply with environmental regulations and sustainability standards (Hilmi et al., 2020; Latip et al., 2025). This distinction is theoretically important because firms may possess strong innovation capability while simultaneously lacking the technological readiness required for environmental execution. Therefore, GTC represents a capability dimension that is functionally distinct from general innovation capability.

3.5 Dual Capability Mediation Logic

The primary conceptual contribution of this study lies in distinguishing Innovation Capability (IC) and Green Technology Capability (GTC) as parallel and non-substitutable mediating mechanisms linking organizational antecedents to Sustainability Practices Intention (SPI). Although both capabilities originate from organizational resources, they operate through functionally distinct pathways. IC primarily functions as an adaptive capability that enhances organizational flexibility, process improvement, and responsiveness to changing environmental conditions. In contrast, GTC functions as an implementation-oriented capability that enables firms to operationalize sustainability objectives through environmentally aligned technological systems. This distinction is particularly significant in manufacturing contexts, where sustainability performance depends not only on innovation and adaptability but also on technological execution capability.

Existing sustainability models have predominantly emphasized innovation capability as the primary mediating construct linking organizational resources to sustainability outcomes. Such approaches implicitly assume that general innovation capability alone is sufficient to explain sustainability-oriented transformation. However, empirical evidence demonstrating partial mediation effects of IC suggests that additional capability mechanisms remain theoretically underexplored (Latip et al., 2025). By incorporating GTC as a parallel mediating mechanism, this study advances a dual-capability perspective that differentiates between general adaptive capability and sustainability-specific technological capability. This perspective provides a more precise and contextually grounded explanation of how organizational resources are translated into Sustainability Practices Intention within resource-constrained SMEs. The resulting framework, therefore, extends existing capability-based sustainability models by introducing internal differentiation within organizational capability structures rather than treating innovation capability as a singular explanatory mechanism.

4. DISCUSSION AND PROPOSITIONS DEVELOPMENT

This section advances the central argument of the study by explaining how organizational resources are translated into Sustainability Practices Intention (SPI) through differentiated capability mechanisms. Rather than conceptualizing sustainability intention as a direct outcome of resource availability, this study posits that such intention is capability-contingent, emerging only when firms possess the operational capacity required to implement sustainability-oriented actions. This position is supported by empirical evidence from Malaysian SMEs, where innovation-related capabilities have been shown to only partially explain sustainability intention, indicating that additional mechanisms are involved (Latip et al., 2025).

Organizational Support (OS) and Human Resource Quality (HRQ) are therefore theorized as enabling conditions rather than direct drivers of SPI. While these resources are essential for sustainability transformation (Barney, 1991; Hart, 1995), their effects are realized only when they are converted into higher-order capabilities. Evidence from manufacturing SMEs suggests that internal resources must be operationalized through intermediate mechanisms to generate sustainability-oriented outcomes (Jalil et al., 2022). This implies that the influence of OS and HRQ on SPI is inherently indirect and mediated through capability development processes.

The first capability pathway operates through Innovation Capability (IC), which enhances the firm's adaptive capacity by supporting learning, process improvement, and operational flexibility. Through these mechanisms, IC reduces uncertainty associated with sustainability adoption and facilitates incremental alignment with sustainability objectives. However, the contribution of IC to SPI is inherently constrained by its domain-general nature. While it strengthens adaptability, it does not guarantee that innovation efforts are directed toward environmental outcomes. This limitation is reflected in empirical findings showing that IC only partially mediates sustainability-related relationships in SME contexts (Latip et al., 2025; Lim et al., 2022).

The second pathway operates through Green Technology Capability (GTC), which provides the technological specificity required for environmental execution. Unlike IC, GTC directly enables the implementation of sustainability practices by equipping firms with the capability to adopt and utilize environmentally aligned technologies. In manufacturing contexts where sustainability performance is highly dependent on production processes, such technological capability becomes critical for translating sustainability objectives into feasible actions (Chen et al., 2020; Lim et al., 2022). This suggests that GTC plays a more direct and implementation-oriented role in shaping sustainability intention.

The distinction between IC and GTC reflects two non-substitutable mechanisms. IC primarily reduces uncertainty and enhances adaptability, while GTC reduces implementation barriers by enabling technological execution. These capabilities operate in parallel, but both influence the formation of sustainability-oriented strategic intent. Emerging evidence indicates that sustainability-specific capabilities exhibit stronger explanatory power for environmental outcomes than general innovation capabilities (Yu et al., 2022; Jalil et al., 2022), reinforcing the need to model both pathways simultaneously.

Within this framework, SPI is conceptualized as a strategic orientation reflecting a firm's commitment to integrating environmental, economic, and social considerations into its operations (Elkington, 1997). However, such commitment is contingent upon perceived feasibility. In resource-constrained SMEs, firms may recognize the importance of sustainability but refrain from forming strong intentions if they lack the

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capabilities required for implementation (Latip et al., 2025). The joint development of IC and GTC therefore reduces both uncertainty and feasibility constraints, enabling firms to form a stronger sustainability practices intention.

Based on this reasoning, the following propositions are advanced:

P1: Organizational Support and Human Resource Quality positively influence Innovation Capability.

P2: Organizational Support and Human Resource Quality positively influence Green Technology Capability.

P3: Innovation Capability positively influences Sustainability Practices Intention.

P4: Green Technology Capability positively influences Sustainability Practices Intention.

P5: Innovation Capability and Green Technology Capability mediate the relationship between Organizational Support, Human Resource Quality, and Sustainability Practices Intention.

4.1 Theoretical Contributions

This study advances theoretical understanding of Sustainability Practices Intention (SPI) in SMEs by introducing capability heterogeneity as a central explanatory mechanism that extends beyond traditional single-capability models, particularly those dominated by Innovation Capability (IC). By distinguishing IC as a general adaptive mechanism and Green Technology Capability (GTC) as a sustainability-specific execution mechanism, the study develops a dual-capability mediation framework in which both capabilities operate as functionally distinct and non-substitutable pathways linking organizational resources to SPI. This refinement extends the Dynamic Capability Theory by incorporating internal differentiation within capability structures, thereby shifting the conceptualization of dynamic capabilities from a homogeneous construct to a multi-layered system with distinct operational roles. In doing so, SPI is reconceptualized as a capability-contingent strategic orientation rather than a direct outcome of resource endowment, offering a more precise explanation of how organizational support and human resource quality are transformed into sustainability intent in resource-constrained SME environments. This study further contributes to the Natural Resource-Based View by demonstrating that environmental competitiveness depends not only on resource possession but also on the configuration of complementary capabilities, thereby strengthening the theoretical link between resource transformation, capability heterogeneity, and sustainability-oriented strategic outcomes.

4.2 Practical Implications

This study provides practical implications by reframing sustainability adoption in SMEs as a capability development challenge rather than a purely resource-driven or compliance-oriented process, emphasizing that organizational support and human resource quality must be effectively translated into both Innovation Capability (IC) and Green Technology Capability (GTC) to generate meaningful Sustainability Practices Intention (SPI). For managers in food manufacturing SMEs, this implies that IC should be strengthened to enhance adaptability, learning, and process efficiency, while GTC must be simultaneously developed to ensure direct technological enablement of environmental practices; neglecting either capability risks creating an imbalance where innovation does not translate into environmental impact or where green technologies are underutilized due to weak absorptive capacity. For policymakers, the findings suggest that sustainability acceleration requires a shift beyond financial incentives toward capability-building interventions such as technical training, technology transfer mechanisms, and structured access to green technologies, while also differentiating clearly between support for general innovation development and sustainability-specific technological capability formation. Collectively, these implications highlight that effective sustainability transformation in SMEs depends on coordinated development of adaptive and technological capabilities, ensuring that sustainability intentions are not only formed but also operationally feasible and implementable.

5. CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

This study develops a theory-integrated conceptual framework to explain Sustainability Practices Intention (SPI) in food manufacturing SMEs by conceptualizing sustainability adoption as a capability-contingent process rather than a direct outcome of resource endowment. By integrating the Natural Resource-Based View, Dynamic Capability Theory, and the Triple Bottom Line, the study demonstrates that organizational support and human resource quality influence SPI indirectly through two functionally distinct and non-substitutable capability pathways: Innovation Capability (IC), which enhances adaptability and reduces uncertainty, and Green Technology Capability (GTC), which enables technological execution and reduces implementation constraints. This dual-capability mediation framework advances sustainability literature by moving beyond single-capability explanations and offering a more precise account of how SMEs translate internal resources into sustainability-oriented strategic intent, particularly in technology-dependent manufacturing contexts where both adaptability and technological readiness are essential.

Despite these contributions, the study is limited by its conceptual nature, as the proposed framework has yet to be empirically validated. In addition, the model focuses primarily on internal organizational factors, without incorporating external contingencies such as regulatory pressure, institutional support, and market dynamics that may shape sustainability adoption. The context is also confined to Malaysian food manufacturing SMEs, which may limit generalizability to other sectors and economies, while the static design does not capture the temporal evolution of capability development. Future research should therefore empirically test the proposed model using quantitative or mixed-method approaches, incorporate external moderating variables to enhance contextual robustness, and examine longitudinal capability development processes to capture dynamic transformation over time. Further research should also extend the model across different industries and national contexts, as well as investigate the intention–behavior gap by linking sustainability practices intention to actual implementation outcomes. Overall, the study underscores that sustainability transformation in SMEs is fundamentally driven by capability differentiation rather than resource availability alone.

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